Appln. No.: 10/523,771

Amendment Dated January 17, 2007 Reply to Office Action of October 17, 2006

<u>Amendments to the Claims:</u> This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

- 1. (Currently Amended) An exhaust system for a lean-burn internal combustion engine comprising a soot filter packed with a mass of elongate, flat, narrow strip metal wherein said mass is compressed to provide a first packing density and a catalyst located upstream of the filter for oxidising NO to NO₂ for combusting soot collected on the filter in NO₂, wherein the catalyst is supported on a metal substrate of the type used in the filter having a second packing density lower than said first packing density, to permit passage of soot particles.
- 2. (Previously Presented) A system according to claim 1, comprising, in order from upstream to downstream, a plurality of metal-based filters adapted successively to trap smaller and smaller particles.
- 3. (Original) A system according to claim 2, comprising at least one wall flow filter for trapping yet smaller particles.
- 4. (Previously Presented) A system according to claim 2, comprising a flow-through monolith between the or each pair of metal-based filters.
- 5. (Currently Amended) A system according to claim 4, wherein the or each flow-through monolith comprises a NO oxidation catalyst, whereby to restore for restoring the NO₂ content, which had been decreased by reaction with soot in the preceding filter.
- 6. (Previously Presented) A system according to claim 1, wherein the filter capacity is sufficient to allow the soot to be combusted continuously by the oxidant.
- 7. (Previously Presented) A system according to claim 1, wherein the filter capacity is sized for accumulations of soot sufficient to increase pressure-drop significantly before the next period of fast running and the system includes a bypass, wherein the pressure-drop through which is equal to the design maximum tolerated pressure-drop through the filter, whereby to avoid engine stalling.

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8. (Previously Presented) A system according to claim 7, comprising means to limit soot emission to atmosphere located downstream of the bypass, which means being selected from the group consisting of a filter, an impingement collector and an oxidation catalyst.

- 9. (Previously Presented) A system according to claim 1, wherein the filter comprises a regular coiled, woven or knitted structure.
- 10. (Previously Presented) A system according to claim 1, wherein the metal of the filter is Type 300 or Type 400 stainless steel.
- 11. (Previously Presented) A system according to claim 1, wherein the metal from which the filter is made comprises an iron alloy containing at least 11.5% Cr, 4% Al and 0.02-0.25% minor constituents such as rare earth, zirconium or hafnium.
- 12. (Previously Presented) A system according to claim 1, wherein the width of the metal strip of the filter is up to 2 mm and its thickness is 0.2 to 0.8 times its width.
- 13. (Previously Presented) A system according to claim 12, wherein the flat, narrow strip metal is a flattened wire.
- 14. (Previously Presented) A system according to claim 1, wherein the filter packing carries a layer catalytic for soot oxidation.
- 15. (Previously Presented) A system according to claim 14, wherein the catalytic layer comprising a washcoat and a component selected from the group consisting of Pt and oxides of Cs and V.
- 16. (Previously Presented) A system according to claim 1, comprising means for generating a component for combusting soot collected on the filter selected from the group consisting of ozone and plasma.
- 17. (Previously Presented) An internal combustion engine comprising an exhaust system according to claim 1.
- 18. (Original) A diesel engine according to claim 17.

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19. (Original) A system according to claim 3, comprising a flow through-monolith between the or each pair of metal-based filters.

- 20. (Currently Amended) A system according to claim 19, wherein the or each flow-through monolith comprises a NO oxidation catalyst, whereby to restore for restoring the NO₂ content, which had been decreased by reaction with soot in the preceding filter.
- 21. (Original) A system according to claim 12, wherein the width of the metal strip is in the range 0.1 to 0.5 mm.